

Iowa Agricultural Education Competency Lists

June 1999

Validated/Minimum Competencies
for educational programs in the areas of:

Agricultural Business, Service and Supply

Agricultural Production

Agricultural Mechanics

Horticulture

Agricultural Products and Processing

Natural Resources

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Introduction

This document is a compilation of minimum competencies to be included in the study of the seven occupational areas of agriculture at the secondary school level: Agricultural Sales & Service, Agricultural Production, Agricultural Mechanics, Horticulture, Agricultural Products & Processing, Forestry, and Conservation & Natural Resources. In this document, we have combined Forestry and Conservation & Natural Resources under one title of Natural Resources. Also, the terms Agricultural Business has been added to the terms Service & Supply. One of the lists is entitled “Technology”. The items in this list can be a part of each of the other areas.

The reader should note that these lists consist of MINIMUM competencies. This document is NOT a compilation of all the knowledge and skills to be learned in each occupational area. Local program content and delivery are dependent on inputs from learners, teachers, advisory councils, parents, employers and other stakeholders.

The competencies listed in this document have been identified and validated by leaders and professionals in each of the occupational areas. The latest validation process was conducted in 1999.

Readers should use this updated list as a source for guidance in constructing their curriculum guides for secondary school programs in agriculture.

Agricultural Business Service and Supply

Occupational

1. Identify the three components of management.
2. Explain the relationship of land, labor, and capital to management.
3. Identify agricultural career opportunities in management, sales and service.
4. Describe the types of record keeping systems used in agriculture.
5. Develop a process for accurately determining business inventory.
6. Utilize accounting procedures to record cash receipts and expenditures.
7. Develop a balance sheet for business.
8. Complete a net worth statement.
9. Identify appropriate financial ratios.
10. Explain the different types of budgets used in business.
11. Prepare an enterprise budget.
12. Identify variable cost.
13. Explain fixed cost.
14. Calculate a least-cost ratio.
15. Explain opportunity cost.
16. Complete a cash flow projection worksheet.
17. Identify types of credit.
18. Determine available credit resources.
19. Calculate the time value of money.
20. Calculate the payback period for an investment. Identify procedures for determining the market value of assets used in depreciation and inventory schedules.
21. List the steps used in purchasing fixed and variable assets in a business.
22. Complete a personal income tax form.
23. Explain the components of a local property tax.
24. Explain social security taxes and their benefit related to types of employment.
25. Demonstrate the impact of the state sales tax on purchases.
26. Identify the four types of agricultural business organizations.
27. Compare the advantages and disadvantages of the four types of agricultural business.
28. Analyze the common types of financial and legal agreements used in agriculture.
29. Identify resources for technical assistance.
30. Identify governmental regulatory agencies related to agribusiness.
31. Identify current government programs that support agricultural business.
32. Determine the types of insurance available for both personal and business needs.
33. List the purposes of governmental farm agencies.
34. Analyze marketing and pricing alternatives for agricultural commodities.
35. Differentiate between marketing, pricing, and grading standards for agricultural commodities.
36. Identify sources of marketing information.
37. Calculate storage charges on grain.
38. Demonstrate the principles of effective selling.
39. List the methods used to advertise an agricultural product.
40. Explain the developmental process used to prepare an appropriate advertisement.
41. Write a sales ticket.
42. Calculate margins and discounts for agricultural supplies.
43. Identify the different types of discounts used in agricultural sales to increase sales.
44. Make change correctly.
45. Operate office equipment.
46. Utilize a data-base, word-processing, and spreadsheet program.
47. Balance daily cash receipts.

48. Balance monthly bank statements.
49. Calculate finance charges.
50. Develop a process for ordering and receiving goods based on inventory needs.
51. Generate periodic billing statements.
52. Explain factors in pricing agricultural merchandising.
53. Demonstrate proper telephone answering skills.
54. Identify livestock facility requirements.
55. Identify factors that are important to human relations in business.
56. Identify feedstuffs and additives available for specific livestock enterprises.
57. Explain the nutritional value of feedstuffs and additives as related to specific livestock enterprises.
58. Interpret charts, graphs, and maps to make specific decisions related to business.
59. Balance a ration in accordance to the nutritional requirements of an animal species.
60. Explain the functions of the monogastric digestive system.
61. Diagram the ruminant digestive system.
62. Identify procedures for developing a quality livestock disease prevention program
63. Demonstrate the proper procedures for administering of animal health products.
64. Evaluate livestock for profitable production traits.
65. Identify the types of wholesale and retail cuts of meat.
66. Explain methods for the proper handling and disposal of animal waste.
67. Determine appropriate land use management based on soil evaluation needs.
68. Read a soil classification map.
69. Interpret the results from a soil and/or tissue test.
70. Explain how the selection of hybrid and certified seed affects performance and profitability.
71. Explain the principles of plant breeding.
72. Identify the types of tillage methods used in crop production.
73. Describe the types of harvesting systems used in crop production.
74. Explain the role of primary and secondary nutrients used in crop production.
75. Select appropriate commercial fertilizers and chemicals based on identified needs.
76. Calculate the amount of fertilizer and/or chemicals needed for a specific task or recommendation.
77. Calibrate fertilizer and chemical equipment.
78. Compare the advantages and disadvantages of biological, chemical and cultural pest controls.
79. Perform routine maintenance on agricultural equipment using service manual schedules.
80. Identify different production techniques and their effect on the environment.
81. Perform plant propagation using sexual, asexual or tissue culture techniques.
82. Demonstrate the proper procedure for planting trees and shrubs.
83. Identify opportunities for the development of diversified crop and/or livestock enterprises.
84. Identify the types of production systems used worldwide and their impact.
85. Determine the impact of biotechnology on world food production systems.
86. Identify the monetary systems of selected countries and their impact on the United States.
87. Explain how the production of one country impacts the production of another.
88. Locate on a map each of the major continents of the world.
89. Locate on a map each of the major agricultural regions of the world.
90. Explain the impact of government policy on the production and marketing of various commodities.
91. Determine the political role of governments and their impact on food production.
92. Compare the differences between measurement systems in the United States and the world.
93. Use the metric system to calculate specific weights and measurement.
94. Explain the linkage between culture and diet.

Leadership

1. Listen effectively.
2. Follow directions.

3. Manage conflict (personal and customer).
4. Prioritize a series of tasks.
5. Utilize time effectively.
6. Speak effectively in front of others.
7. Work effectively with others.
8. Define goals.
9. Delegate duties.
10. Adapt to environment/situation.
11. Facilitate group interaction (teamwork).
12. Lead a discussion.
13. Organize an event.
14. Become personally involved in professional organizations.

Job Getting, Job Keeping

1. Identify skills, physical and emotional requirements for a job.
2. Complete required forms.
3. Construct an application letter.
4. Evaluate a job offer, benefits, time, and working environment.
5. Interact with others in a courteous and tactful manner.
6. Cooperate with others.
7. Accept individual differences.
8. Respect the property of others.
9. Organize thoughts and clearly express point of view.
10. Organize thoughts and write clearly.
11. Exhibit dependability responsibility on the job.
12. Demonstrate punctuality.
13. Ask for help when needed.
14. Accept new challenges.
15. Demonstrate initiative.
16. Accept supervision willingly.
17. Adapt to change/demonstrate flexibility.
18. Manage time effectively.
19. Follow rules and regulations.
20. Product quality work.
21. Work within guidelines
22. Take responsibility for mistakes and/or good work.
23. Comply with safety and health rules.
24. Utilize equipment correctly as shown/demonstrated by supervisor.
25. Compose a resume.
26. Maintain clean and orderly work area.
27. Demonstrate personal hygiene and cleanliness.
28. Explain the relationship between public and private sectors.
29. Explain the concept of competition.
30. Analyze the concept of supply and demand.
31. Explain the concept of organized labor and business.
32. Explain the concept of business cycles.
33. Explain the nature of international trade.
34. Explain the concept of profit.
35. Demonstrate proper telephone etiquette.

Entrepreneurship

1. Analyze business organizations.
2. Identify skills required of a business owner.
3. Recognize relevant, ethical issues in business.

4. Identify the personal characteristics of entrepreneurs.
5. Analyze the contents of a business plan.
6. Recognize the importance of technical assistance.
7. Explain types of business ownership.
8. Identify factors in obtaining finances for a new business.
9. Demonstrate the ability of market analysis.
10. Develop positive community relations.